

Claims

1. A primer composition comprising
 - 5 - at least one polyurethane prepolymer **A** having isocyanate end groups,
 - at least one aliphatic polyisocyanate **B**,
 - 10 - at least one aromatic polyisocyanate **C**,
 - at least one reaction product **D** obtainable from at least one epoxysilane and at least one aminosilane or from at least one epoxysilane
15 and at least one mercaptosilane.
2. The primer composition of claim 1, characterized in that the polyurethane prepolymer **A** is prepared from at least one polyol and at least one
20 polyisocyanate.
3. The primer composition of claim 2, characterized in that the polyol is a polyoxyalkylene polyol.
- 25 4. The primer composition of claim 3, characterized in that the polyol is a polyoxypropylene polyol, in particular a polyoxypropylene diol or triol.
- 30 5. The primer composition of any one of claims 2 to 4, characterized in that the polyol has a molecular weight of 250-20 000 g/mol, in particular 500-10 000 g/mol, preferably 800-4000 g/mol.
- 35 6. The primer composition of any one of the preceding claims, characterized in that the aliphatic polyisocyanate **B** is an aliphatically NCO-bearing isocyanurate **B1** and/or an aliphatically NCO-

bearing biuret **B2**.

7. The primer composition of claim 6, characterized in that the aliphatic NCO-bearing isocyanurate **B1** is an IPDI-isocyanurate.

8. The primer composition of claim 6 or 7, characterized in that the aliphatically NCO-bearing biuret **B2** is an HDI-biuret.

9. The primer composition of any one of the preceding claims, characterized in that the aromatic polyisocyanate **C** is an aromatically NCO-bearing isocyanurate.

10. The primer composition of claim 9, characterized in that the aromatic polyisocyanate **C** is an aromatically NCO-bearing isocyanurate which can be prepared from toluene diisocyanate and hexamethylene diisocyanate.

11. The primer composition of any one of the preceding claims, characterized in that the epoxysilane used for preparing the reaction product **D** is an epoxydimethoxymethylsilane, an epoxytrimethoxysilane or an epoxytriethoxysilane, preferably 2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane, 3-glycidylxypropyltrimethoxysilane or 3-glycidylxypropyltriethoxysilane, especially 3-glycidylxypropyltrimethoxysilane.

12. The primer composition of any one of the preceding claims, characterized in that the aminosilane used for preparing the reaction product **D** is an aminodiethoxymethylsilane, aminodimethoxymethylsilane, aminotrimethoxysilane or an aminotriethoxysilane, in particular a trimethoxysilane having primary amino groups or in particular a triethoxysilane having primary amino groups, preferably

3-(2-aminoethylamino)propyltrimethoxysilane or
3-aminopropyltrimethoxysilane.

- 5 13. The primer composition of any one of the preceding claims, characterized in that the reaction product **D** is prepared from 3-glycidyloxypropyltrimethoxysilane and 3-aminopropyltrimethoxysilane.
- 10 14. The primer composition of any one of the preceding claims, characterized in that for preparing the reaction product **D** epoxysilane and aminosilane are used in a ratio of the number of active amine hydrogens/number of epoxy groups = 3:1 - 1:3, especially 2:1 - 1:1.5, preferably 2:1 - about 1:1.
- 15 15. The primer composition of any one of the claims 1-11, characterized in that for preparing the reaction product **D** epoxysilane and mercaptosilane are used in a ratio of the number of mercapto groups/number of epoxy groups = 1.5:1 - 1:1.5, especially 1.2:1 - 1:1.2, preferably about 1:1.
- 20 16. The primer composition of any one of the preceding claims, characterized in that it further comprises at least one solvent which is not isocyanate-reactive at room temperature.
- 25 17. The primer composition of claim 16, characterized in that the solvent is a dialkyl ketone or an alkyl carboxylic acid having C1 to C6 alkyl substituents.
- 30 18. The primer composition of claim 17, characterized in that the solvent is selected from the group consisting of methyl ethyl ketone, acetone, ethyl acetate, butyl acetate, hexyl acetate and diethyl malonate.
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19. The primer composition of any one of the preceding claims, characterized in that it further comprises at least one catalyst, preferably an organotin catalyst, selected in particular from the group consisting of dibutyltin dilaurate, dibutyltin dichloride, tin-thioester complexes, mono-n-butyltin trichloride, di-n-butyltin oxide, di-n-butyltin diacetate, and dibutyltin carboxylate.

20. The primer composition of any one of the preceding claims, characterized in that it further comprises at least one silane selected from the group consisting of 3-glycidyloxypropyltrimethoxysilane, 3-glycidyloxypropyltriethoxysilane, 2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane, 3-ureidopropyltriethoxysilane, 3-(4,5-dihydroimidazolyl)propyltriethoxysilane, 3-methacryloyloxypropyltrimethoxysilane (monomeric or polymerized), vinyltrimethoxysilane (monomeric or polymerized), vinyltriethoxysilane (monomeric or polymerized), vinyltris(2-methoxyethoxy)silane (monomeric or polymerized), 1,3,5-tris[3-(trimethoxysilyl)propyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione, methyltrimethoxysilane, methyltriethoxysilane, trimethoxypropylsilane, triethoxypropylsilane, 2-methylpropyltrimethoxysilane, triethoxyisobutylsilane, octyltrimethoxysilane, octyltriethoxysilane, hexadecyltrimethoxysilane, cyclohexyldimethoxymethylsilane, 3-isocyanatopropyltrimethoxysilane, 3-isocyanatopropyltriethoxysilane, 3-methacryloyloxypropyltriethoxysilane (monomeric or polymerized), especially 3-glycidyloxypropyltrimethoxysilane and 3-glycidyloxypropyltriethoxysilane.

21. The primer composition of any one of the preceding claims, characterized in that it comprises at least one filler, especially carbon black.

22. The use of the primer composition of any one of claims 1 to 21 as a primer for adhesives, sealants or floor coverings, especially 1-component moisture-curing polyurethane adhesives or sealants based on polyurethanes or polyurethane-silane hybrids.

23. A method characterized in that a primer composition of any one of claims 1 to 21 is applied by means of brush, felt, cloth or sponge to a substrate by hand or automatically or by means of robots.

24. The method of claim 23, characterized in that the substrate is glass, glass ceramic or a plastic, especially PDMS-PC or PDMS-PMMA.